



CORIELL INSTITUTE
FOR MEDICAL RESEARCH

The NINDS Repository Biomarker Discovery Collection: A Public Resource of Biomaterials for Neurodegenerative Disease Research

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The Coriell Institute

- History
 - Founded in 1953, Camden, NJ
 - Independent, not-for-profit organization
- Biobanking
 - House major NIH-funded and private biorepositories
 - > 2 million vials of cells
 - > 2 million tubes of DNA
- Distribution
 - 8,000 cell cultures, 100,000 DNA specimens each year
 - 64 countries
 - > 7,000 peer-reviewed papers citing ~ 12,000 biospecimens



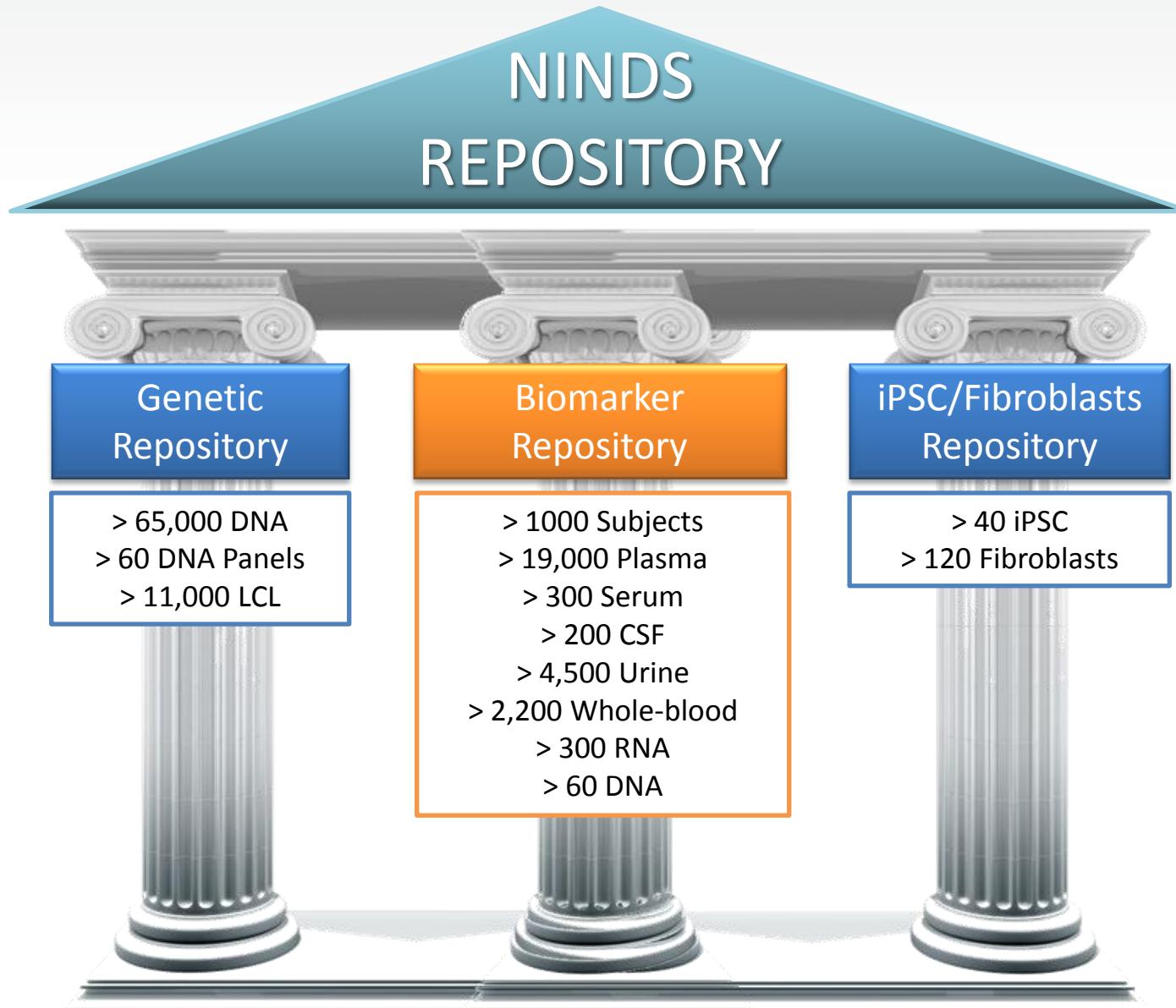
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The NINDS Repository

- Founded in 2002 with the goal of accelerating genetic discoveries in complex neurologic disorders
- Includes biological samples from > 41,000 individuals
- Biospecimens and clinical data available via online catalog (<http://ccr.coriell.org/NINDS/>)

Disease Subcollection	Samples Received	Unique Subjects	Affected Subjects	At Risk Subjects	Unaffected Subjects
Alzheimer's Disease	6	4	2	2	0
Cerebrovascular Disease	20,422	12,478	10,285	2,193	0
Control	13,892	6,958	0	0	6,958
Dystonia	1,862	926	910	16	0
Epilepsy	11,238	5,650	3,819	1,831	0
Huntington's Disease	25,406	1,428	256	860	412
Motor Neuron Disease	5,477	2,743	2,539	204	0
Parkinsonism	13,644	6,885	6,135	750	0
Tourette Syndrome	8,134	4,051	2,846	1,205	0
TOTAL	100,081	41,123	26,792	7,061	7,270

NINDS Repository Collections

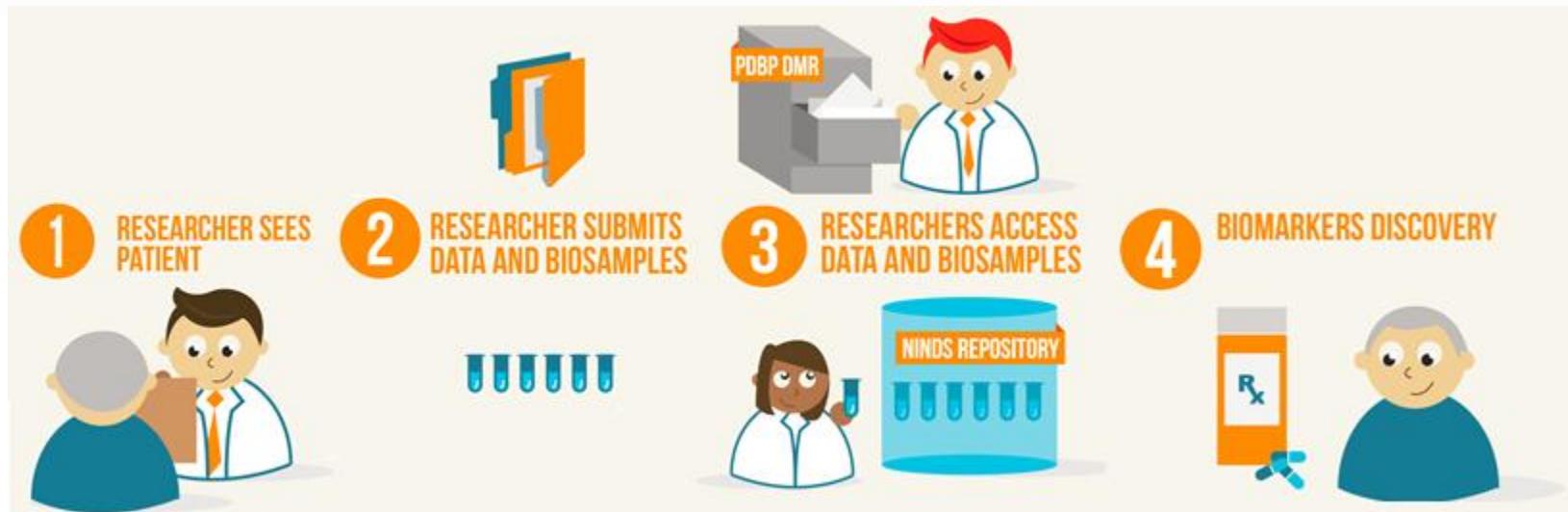


NINDS Biomarkers Discovery Collection

- PDBP
 - Parkinson's Disease Biomarkers Program
 - BioFIND
 - Fox Investigation for the New Discovery of Biomarkers
 - PREDICT-HD
 - Neurobiological Predictors of Huntington's Disease
- 5 yrs. 1,400 unique subjects
Longitudinal Visits 2/yr.
(900 affected / 500 control)
- 2 yrs. 240 unique subjects
2 Visits within 2 weeks
(120 affected / 120 control)
- 10+ yrs. 1,380 unique subjects
Longitudinal Visits 1/yr.
(230 diagnosed / 850 at-risk / 300 control)



Biomarker Studies Workflow

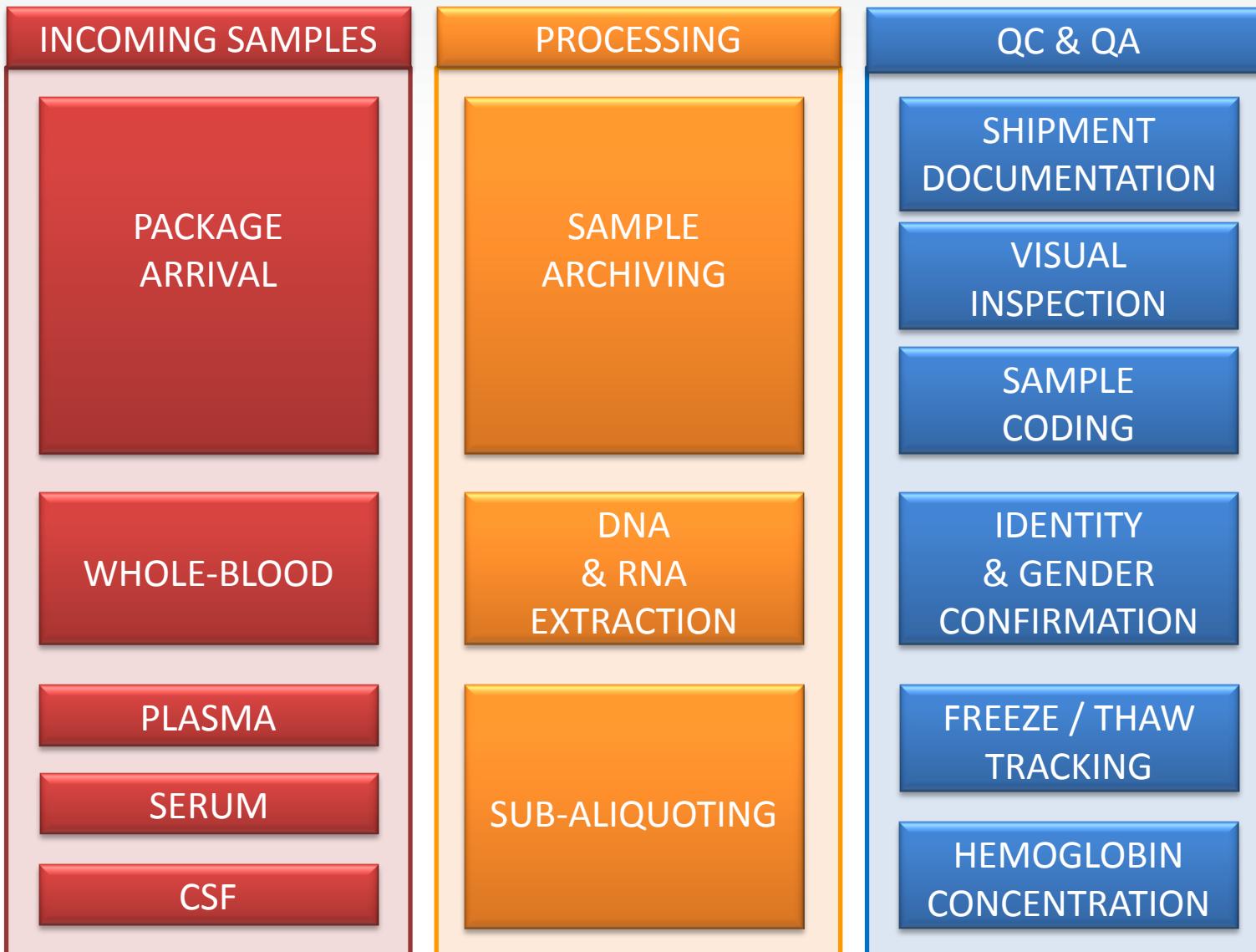


<https://pdbl.pdbp.ninds.nih.gov/assets/PDBP%20Infographic.pdf>

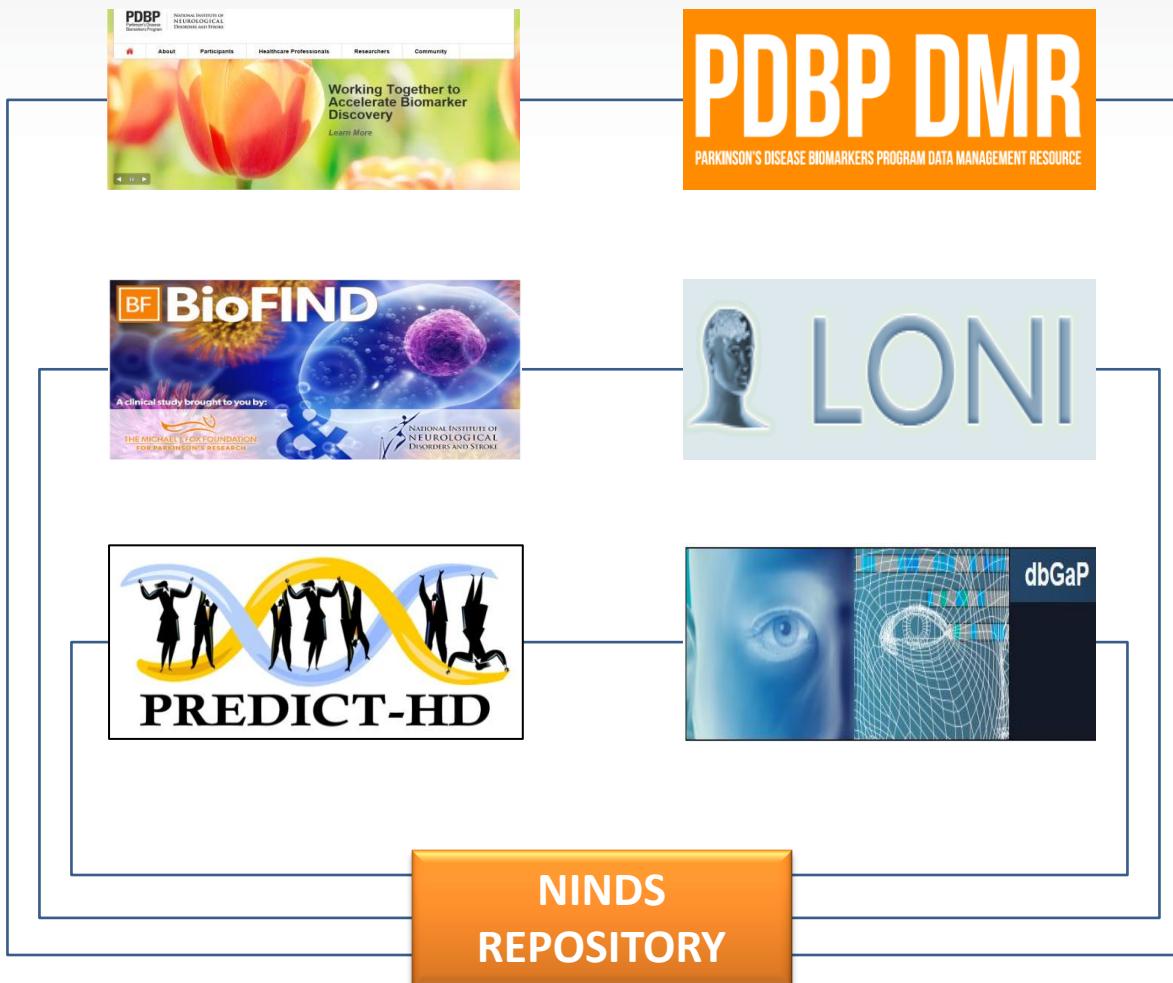


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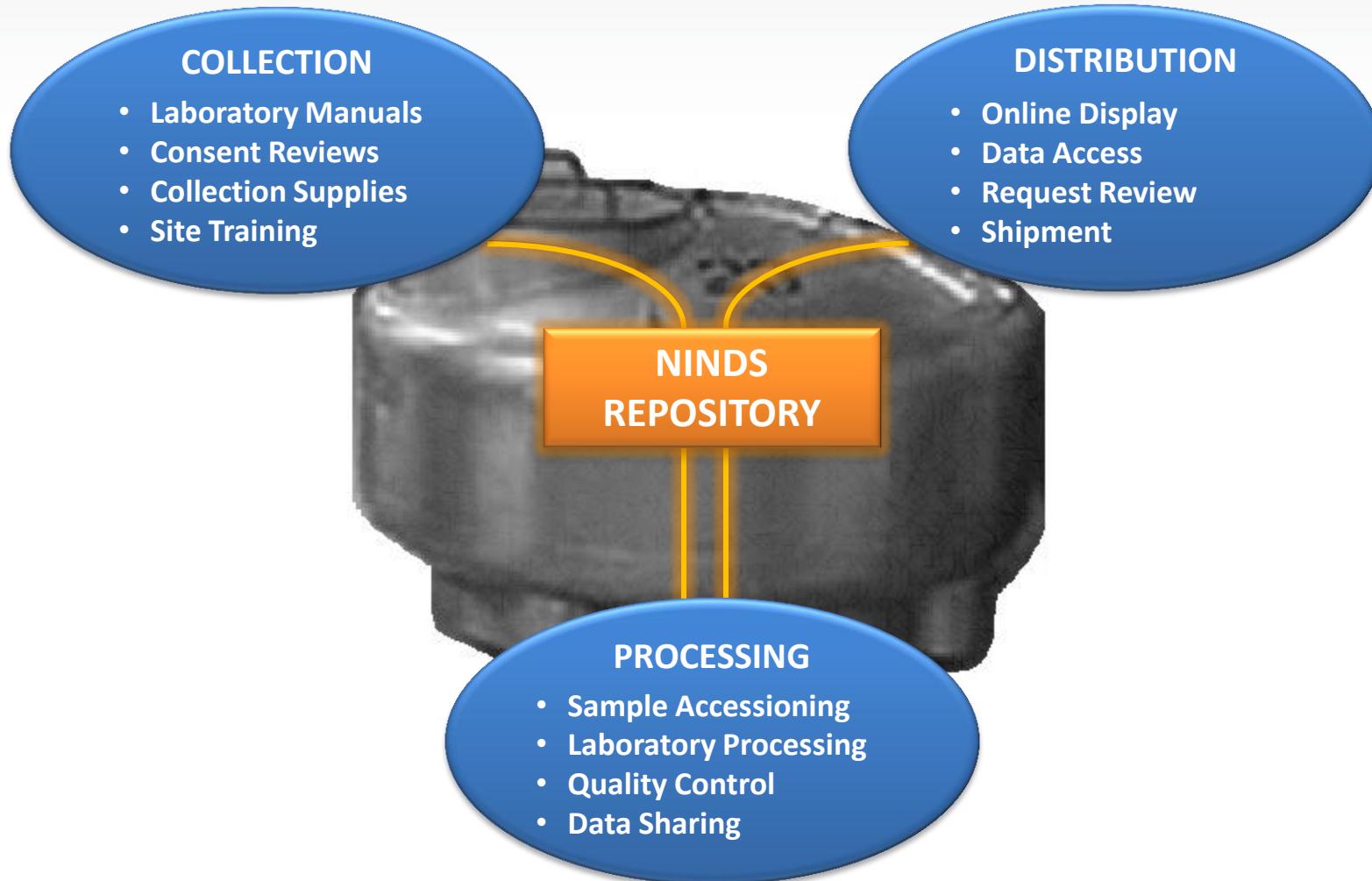
Processing, Quality Control and Assurance



Integrating Biospecimens with Data



The Role of the Biorepository



Summary

- The NINDS Repository
 - Publicly accessible
 - Biological specimens and associated de-identified clinical data
 - Sample types
 - » DNA, LCL, Fibroblasts, iPSC
 - » RNA, Plasma, Serum, CSF, Urine, Whole-blood
- NINDS Biomarker Studies
 - Standardization + Adaptability
 - » Sample Collection
 - » Laboratory processing, QC & QA
 - » Biospecimens and Data Integration



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